

PATENT
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TTC 015389-002616US
Geron 018/210c

CLAIM AMENDMENTS

1 to 72. *CANCELLED*

73. (New) A synthetic or recombinant telomerase reverse transcriptase protein, or a variant thereof, or a fragment thereof, wherein the protein, variant or fragment contains a sequence that is at least 80% identical to SEQ. ID NO:2, and has telomerase catalytic activity when complexed with a telomerase RNA.
74. (New) A composition comprising the protein, variant or fragment of claim 73, and further comprising an RNA, wherein the protein, variant or fragment and the RNA form a telomerase ribonucleic acid complex.
75. (New) An isolated, synthetic, substantially pure, or recombinant polynucleotide comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 73, or the complement of said nucleic acid sequence.
76. (New) The polynucleotide of claim 75, comprising a promoter sequence operably linked to the sequence that encodes the protein, variant or fragment.
77. (New) A isolated cell comprising the recombinant polynucleotide of claim 75.
78. (New) The cell of claim 77, which is a eukaryotic cell.
79. (New) A method of preparing recombinant telomerase comprising contacting the protein, variant or fragment of claim 73 with a telomerase RNA component under conditions that they associate to form a telomerase enzyme capable of catalyzing the addition of nucleotides to a telomerase substrate.
80. (New) A method of increasing the proliferative capacity of a cell, comprising expressing in the cell a polynucleotide according to claim 75.
81. (New) A synthetic or recombinant telomerase reverse transcriptase protein, or a variant thereof, or a fragment thereof, wherein the protein, variant or fragment contains a sequence that is at least 90% identical to SEQ. ID NO:2, and has telomerase catalytic activity when complexed with a telomerase RNA.

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82. (New) A composition comprising the protein, variant or fragment of claim 81, and further comprising an RNA, wherein the protein, variant or fragment and the RNA form a telomerase ribonucleic acid complex.
83. (New) An isolated, synthetic, substantially pure, or recombinant polynucleotide comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 81, or the complement of said nucleic acid sequence.
84. (New) The polynucleotide of claim 83, comprising a promoter sequence operably linked to the sequence that encodes the protein, variant or fragment.
85. (New) A isolated cell comprising the recombinant polynucleotide of claim 83.
86. (New) The cell of claim 85, which is a eukaryotic cell.
87. (New) A method of preparing recombinant telomerase comprising contacting the protein, variant or fragment of claim 81 with a telomerase RNA component under conditions that they associate to form a telomerase enzyme capable of catalyzing the addition of nucleotides to a telomerase substrate.
88. (New) A method of increasing the proliferative capacity of a cell, comprising expressing in the cell a polynucleotide according to claim 83.
89. (New) A synthetic or recombinant telomerase reverse transcriptase protein, or a variant thereof, or a fragment thereof, wherein the protein, variant or fragment contains a sequence that is at least 80% identical to 500 contiguous amino acids in SEQ. ID NO:2, and has reverse transcriptase activity when complexed with a telomerase RNA.
90. (New) A composition comprising the protein, variant or fragment of claim 89, and further comprising an RNA, wherein the protein, variant or fragment and the RNA form a telomerase ribonucleic acid complex.
91. (New) An isolated, synthetic, substantially pure, or recombinant polynucleotide comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 89, or the complement of said nucleic acid sequence.

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92. *(New)* The polynucleotide of claim 91, comprising a promoter sequence operably linked to the sequence that encodes the protein, variant or fragment.
93. *(New)* A isolated cell comprising the recombinant polynucleotide of claim 91.
94. *(New)* The cell of claim 93, which is a eukaryotic cell.
95. *(New)* A method of preparing recombinant telomerase comprising contacting the protein, variant or fragment of claim 89 with a telomerase RNA component under conditions that they associate to form a telomerase enzyme capable of catalyzing the addition of nucleotides to a telomerase substrate.
96. *(New)* A method of increasing the proliferative capacity of a cell, comprising expressing in the cell a polynucleotide according to claim 91.
97. *(New)* The protein, variant, or fragment of claim 89, wherein the protein, variant or fragment contains a sequence that is at least 95% identical to 100 contiguous amino acids in SEQ. ID NO:2.
98. *(New)* The protein, variant, or fragment of claim 75, wherein the protein, variant or fragment contains a sequence that is at least 98% identical to 100 contiguous amino acids in SEQ. ID NO:2.
99. *(New)* The protein, variant, or fragment of claim 89, wherein the protein, variant or fragment contains a sequence that is at least 95% identical to 500 contiguous amino acids in SEQ. ID NO:2.
100. *(New)* The protein, variant, or fragment of claim 89, wherein the protein, variant or fragment contains a sequence that is at least 98% identical to 500 contiguous amino acids in SEQ. ID NO:2.
101. *(New)* The polynucleotide of claim 75, comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 97.
102. *(New)* The polynucleotide of claim 75, comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 98.

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103. *(New)* The polynucleotide of claim 75, comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 99.

104. *(New)* The polynucleotide of claim 75, comprising a nucleic acid sequence that encodes the protein, variant or fragment of claim 100. --